Massachusetts Urban & Community Forestry Program

The Citizen Forester

MAY 2013

The Successful Planting Initiative Part III: Tree Establishment

By Rick W. Harper, Extension Assistant Professor of Urban & Community Forestry, UMass-Amherst

Having reviewed the important elements from the site assessment phase and the plant selection phase, we now have a better understanding about the local environmental conditions (i.e. light levels, spatial constraints, climate) that selected urban trees will be growing in, their site requirements (i.e. soil conditions, space requirements), and their attributes (i.e. flowering/fruiting habit, tree height potential, etc.). While the plant selection phase can allow for the proactive management of many important forthcoming challenges, it is the establishment phase itself that can directly impact even the short-term success of a planting initiative.

The ultimate objective of the establishment phase is to ensure the survival of the tree in its new environment. As we know, the act of transplanting itself can be a very stressful occurrence. Depending on the system of production, significant amounts of root loss may occur, and even the most basic biological functions (i.e. plant growth) may be compromised for up to several years. And these are the trees that survive this experience – there are many specimens that don't make it past even the short term (the first two or three years) in their new location.

A swamp white oak (*Quercus bicolor*) being dug with a tree spade. A significant amount of roots may be lost at the time of transplant.

According to a planting that was studied almost a decade (2004) ago, nearly two-thirds of the trees featured excessive soil on top of their root systems. This can be compared to a study conducted a decade and a half earlier, where significantly fewer (i.e., one-third) trees established featured excessive soil on top of their root systems. Since we believe that excessive soil on root systems may be associated with a number of problems (i.e. the formation of girdling roots, various disease and insect-related challenges, overall reduction of tree longevity), why the apparent increase in this trend from the late 80's through 2004? As with many situations, a number of potential factors have been speculated about:

1) In the production site:
- Excessive planting depth from the earliest stages of propagation and growth
- Weed management practices (i.e. cultivation) where soil may potentially end up accruing around the base of the tree
- Transplant practices where soil may potentially accumulate on top of the roots as trees are dug and balled

2) In the new establishment site:
- Excessive planting depth
- Settling of the plant or the root-ball itself (referred to as 'pancaking')
- Addition/accumulation of excessive materials (i.e. mulching as part of the after-care)

As with any challenge, an intervention at the right time with the right strategy can often go a long way to remediating the situation. Fortunately, many problems that may exist as a result of production may be addressed in the establishment phase AND challenges often associated with the establishment stage can be prevented through

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Up Ahead:

The Successful Planting Initiative Part II: Tree Selection

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good practice. Field-grown/balled and burlapped trees are believed to comprise up to 90% of the types of trees that are currently established in a typical tree planting in the Northeast. Assuming this production system, good establishment practices include the following:

- Digging a planting hole of ample width, at least 2x the width of the rootball (recommendations range from 2x-5x the diameter of the rootball)
- Ensuring that burlap, twine and wire baskets are entirely removed
- Placing the tree in the hole at both the appropriate upright angle and depth
- Appropriate replacement of soil so that there is not excessive coverage to roots or contact above the root flare at the stem
- Appropriate addition of a two to three-inch layer of mulch, not contacting the bark of the tree
- Immediate watering, with a plan for regular follow-up
- A final quality-control check, where depth of structural roots is verified – possibly with the use of a chaining pin or some other measuring implement

An important – but often overlooked – part of the establishment phase is personal expectation. Conventional wisdom (supported by research) indicates at least a three-year period where recently-established trees will likely grow very little; when considering other factors consistent with an urban setting, this period may in fact be significantly longer. Additionally, the demand for larger trees at the time of installation can further prolong the wait for the new tree(s) to start growing in earnest. Whatever the specific time period for a particular planting, the idea that patience is a virtue applies – especially when it comes to waiting for our trees to take root, and take off.

Rick W. Harper, serves as Extension Assistant Professor of Urban & Community Forestry, UMass Department of Environmental Conservation, Amherst, and is also an ISA Board-Certified Master Arborist.

Though this urban site offers abundant useable soil volume, establishment practices should have included the application of mulch, in-part to help prevent mechanical injury.

Picks and Shovels

For further reading on tree establishment:

University of Massachusetts, Landscape, Nursery & Urban Forestry Fact Sheets
http://extension.umass.edu/landscape/fact-sheets

'Cornell Guide for planting trees and shrubs' by Richard Weir III
http://www.ecommons.cornell.edu/handle/1813/3572

'Recommended Urban Trees' by Nina Bassuk, Ph.D.
http://www.hort.cornell.edu/uhi/outreach/recurbtree/index.html

For further reading on tree roots and excessive soil conditions:
http://www.mortonarb.org/meet-our-scientists/gary-watson.html

Species Spotlight—Downy serviceberry, *Amelanchier arborea*

By Mollie Freilicher
MA-DCR
Community Action Forester

Also known as Juneberry and shadbush, downy serviceberry is native from southern Newfoundland and Nova Scotia to northern Florida, west to eastern Oklahoma, and north to Minnesota. This member of the rose family is found growing in moist soils of hardwood forests and is even found up to 6,000 feet in the southern Appalachians. It is hardy in USDA zones four to nine. The common name "downy" refers to the buds which have fine white hairs at the edge or to the young leaves, which are downy on the underside. There several origins of the "serviceberry" name, as well—that it is related to the European *Sorbus domestica* and that, over time, *sorbus* became "service." The name also may have related to the timing of the flowering, in early spring, which signaled that the ground had thawed enough to begin holding services and burials for those who passed away over the winter. "Shadbush" also refers to the timing of the flowering, which coincided with American shad coming up rivers to breed. The other closely-related serviceberry is shadblow serviceberry (*Amelanchier canadensis*), which is often used interchangeably for downy serviceberry in the nursery trade, although the shadblow is typically a shrub. To make matters more confusing, there is yet a third serviceberry commonly used, the Allegheny Serviceberry (*Amelanchier laevis*), but we will save that for another day.

Downy serviceberry is typically a small tree or large, multi-stemmed shrub, ranging from 15 to 25 feet tall. The leaves of downy serviceberry are alternate, elliptical, and small—often one to three inches long, with finely serrated edges. The small leaves contribute to a medium texture in the growing season. Young leaves also are a bit downy on the underside. The leaves are medium to dark green, turning yellow, orange, or red in the fall, often putting on a brilliant display. The bark is smooth and gray, with faint fissures that look like stripes running the length of the tree that add to the year-round interest of the tree. The trunk or trunks, sometimes curving, provide a graceful shape and add to the medium texture of the tree in winter. The buds are longer than they are wide and have purple or crimson scales with white hairs at the edges. If you look up at serviceberry buds against a blue sky, you may notice the sun catching those hairs, a sight that is both pretty and helpful in identifying serviceberry in winter. (The other helpful characteristic is the stripy bark.)

The downy serviceberry blooms in early spring with flowers that are perfect and white and that hang in racemes that can be up to four inches long. The flowers appear while the leaves are emerging, making the display even showier. The flowers develop into a small pome that, at its ripest—sometime in early summer— is purplish-black. The fruit is sweet, and birds usually devour it quickly. If you are lucky enough to be able to pick the fruit first, it can be used in pies and other desserts. Its delectability has been recognized for some time. In his *Report on Trees and Shrubs Occurring Naturally in the Forests of Massachusetts*, George Barrell Emerson suggests bringing the serviceberry into cultivation for fruit, believing that if it was cultivated and ameliorated in the same way as the apple has been, that there would be "few fruits now known superior to what it would become."

Downy serviceberry does best in moist, well-drained, acidic soils and will do well in full sun or partial shade. It is susceptible to rusts, scales, aphids, and powdery mildew,

Photos: Form: UConn Plant Database; leaf, flower, and fruit: Virginia Tech; bark: Paul Wray, Iowa State University, Bugwood.org.

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Species Spotlight—Downy Serviceberry

(Continued from page 3)

Photo: Virginia Tech

although many newer cultivars have less trouble with insects and diseases.

The flowers and form of downy serviceberry make it ideal for small gardens, for naturalistic plantings, for woodland borders, or areas near ponds or streams. In the wild, it often grows at woodland edges. It is not particularly tolerant of pollution, but is often utilized as a street tree in residential areas where power lines are present. Downy serviceberry makes a good addition to the palette of trees for the planted landscape.

Tree City USA Awards Ceremony and Luncheon

For 2012 Tree City, Tree Line, and Tree Campus USA Participants

June 5, 2013
9:00 a.m. to 3:00 p.m.
Wheelock College, Brookline

Details will be sent to 2012 participants by email, at a later date.

Questions? Contact Mollie Freilicher, mollie.freilicher@state.ma.us, 413-577-2966.

Satellite Imagery Resource

Understanding Landsat Imagery

While a few years old, this video produced by NASA, explains how researchers use near-infrared Landsat imagery to track tree mortality in the West due to mountain pine beetle and to explore the relationship between areas that the mountain pine beetle has infested and wildfire. The outcome may surprise you, as researchers did not find preliminary evidence that areas damaged by beetles were more susceptible to fire risk. Watch the video or read the transcript here: http://www.nasa.gov/topics/earth/features/beetles-fire.html.

For a tutorial on Landsat imagery in general, go to: http://zulu.ssc.nasa.gov/mrsid/tutorial/Landsat%20Tutorial-V1.html

False-Color, also called Near Infrared or NIR image, with vegetation that is easy to distinguish (red) www.nasa.gov.

True-color image, www.nasa.gov.

Growing Greener—in Massachusetts

After a late, but snowy winter, it is finally time to start planting trees again in the Commonwealth. Many communities have already started and observed Arbor Day (April 26) by planting trees. There are lots of resources to help communities with tree selection and planting and it is good to keep in mind that not only is proper planting important, but choosing the right tree for the right space—both now and at maturity – is, as well. Our neighbors to the north in Vermont have produced a wonderful guide that can help in tree selection. *The Vermont Tree Selection Guide* can help you make the right choice about what to plant and where. (You can also revisit the April issue of *The Citizen Forester* for guidance.)

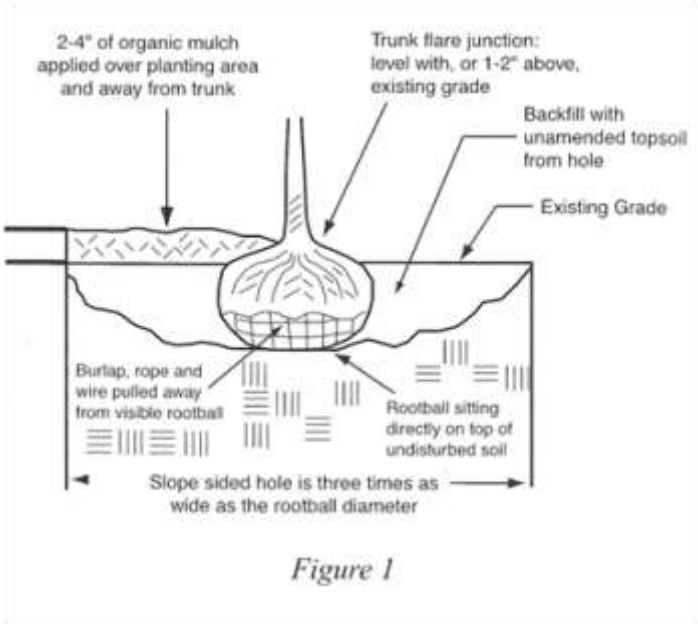

Figure 1

Here at *The Citizen Forester*, we cannot stress enough the importance of making sure trees are planted at the proper depth, with the trunk flare at or just above grade (Figure 1.) A tree planted too deeply is one that will face unnecessary hurdles—girdling roots, slower establishment, reduced water infiltration, and other stresses that may lead to an untimely death. Be aware also of killing your tree with kindness—excessive mulch. Piling more than three to four inches of mulch over the root area and against the trunk recreates the conditions of planting a tree too deeply—limiting oxygen and water to the roots, and creating a safe haven for insects and rodents, who may find the deep mulch hospitable and the bark on the trunk delicious, girdling the tree from below. This is true for new trees as well as mature trees. Excessive mulch can kill trees of any age. For guidance on proper planting procedures, check out the USDA Forest Service *Tree Owner's Manual*: http://na.fs.fed.us/pubs/detail.cfm?

Growing on Trees—Upcoming Events

We do our best to ensure that listings are accurate, but please check with program organizers for the most up-to-date information on registration and other details.

Evenings with Experts

The Restoration of Consecration Dell

June 5, 2013 7:00 p.m. — 8:30 p.m.
Cambridge Public Library, 449 Broadway, Cambridge, MA

Dave Barnett, President, Mount Auburn Cemetery
At the heart of Mount Auburn, Consecration Dell is a landscape of great beauty and a hot spot for birding. Yet not long ago, it was overrun by invasive species and suffering from erosion. With their commitment to stewardship, Cemetery staff have spent over a decade restoring this special place, establishing a thriving community of native plants and improving vital habitat for wildlife. This story is full of lessons about the significant challenges and rewards of ecological restoration. Dr. Barnett is a respected ecologist and horticulturalist, as well as the President of the Cemetery.
More information at: http://www.grownativemass.org/programs/eveningswithexperts


Consecration Dell,
www.mountauburn.toursphere.com

Growing on Trees—Upcoming Events

Emerald Ash Borer Workshop—Shelburne Falls

Join us on May 8 in Shelburne Falls for a free training session on emerald ash borer. Learn about the biology of the insect, how towns and cities can respond, how *you* can help monitor for the pest, regulatory information, forest management considerations, and more. The trainings are free and open to the public, but pre-registration is requested. Continuing education credits have been requested.

Shelburne Falls EAB Training
A Workshop for Landowners
Sponsored by the Massachusetts Department of Conservation and Recreation and the USDA Forest Service.

Wednesday, May 8, 5:00 p.m. to 8:00 p.m.
Shelburne-Buckland Community Center
53 Main Street, Shelburne Falls, MA 01370

Pre-registration: http://goo.gl/KODlb (Google Docs)

Questions: Contact Alison Wright-Hunter, Phone: (413) 545-5751, alison.wright@state.ma.us

Online Learning Forum for Professionals and Tree Enthusiasts: Urban Forestry Today

Presented by the University of Massachusetts Department of Environmental Conservation, in cooperation with the US Forest Service Urban Natural Resources Institute.

Hear the latest from researchers and professionals from universities, municipalities, and industry as they discuss their most recent findings, from research to practice, that will enable us to protect and enhance the health of our community trees.

Visit www.unri.org/uftoday on Thursday May 23, 2013 from Noon – 1:00 PM Eastern to hear Kristina Stinson, Ph.D., UMass Department of Environmental Conservation, as she discusses her research findings pertaining to *Climate Change and Urban Tree Response.*

This broadcast is free and will offer the opportunity to earn ISA Credit.

The next webcast will be held on June 20, 2013 from Noon – 1:00 PM Eastern.

For more information, contact:

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New England Botanical Club

June 8-9, 2013 - Field Trip to Vermont - Dr. Charles V. Cogbill, Plainfield, VT

"Presettlement Forests of New England" on June 8

http://www.rhodora.org/meetings/upcomingmeetings.html

Growing on Trees

New England Wildflower Society Courses

Native New England Shrubs

The many species of native New England shrubs display a wide variation in size, shape, and color, and in the characteristics of their bark, flowers, and fruits. This course introduces students to about 50 species growing in this region. Learn identification and become familiar with family characteristics and historic uses. Bring a hand lens to each session. Field sessions are held in locations off-site, with directions provided during the first class.

When: Wednesdays, May 29, June 5, 12, 2013, 6:30 p.m.- 8:45 p.m.; and Saturdays, June 1, 8, 9 a.m.-1:30 p.m.
Location: Garden in the Woods, Framingham, MA, and field sites
Course Code: bot3300
Instructor: Roland "Boot" Boutwell, naturalist
Fee: $215 (Member) / $258 (Nonmember)
Limit: 16 Credit: Core-FB or HD; Elective-all certificates
Cosponsor: MA Audubon Drumlin Farm
More information: http://www.newfs.org/learn/catalog/bot3300

Exploring Wetland Shrubs

With a pond, a stream, and a bog, the Garden provides us with an excellent field site to examine shrubs that grow in and around wetlands. We also cover a few shrubs that grow in higher and drier habitats. In addition to identification of 15-20 New England shrubs, the class includes some fun and interesting natural history. Please bring lunch, and a hand lens and shrub field guide, if you have them.

Spicebush, *Lindera benzoin.* Photo by Cody Hough, Wikipedia.org.

When: Thursday, July 11, 2013, 10:00 a.m.-2:00 p.m.
Location: Garden in the Woods, Framingham, MA
Course Code: wet3019
Instructor: Roland "Boot" Boutwell, naturalist
Fee: $53 (Member) / $64 (Nonmember)
Limit: 16 Credit: Elective-FB/Adv.FB
Cosponsor: Massachusetts Association of Conservation Commissioners

DCR crews planting trees in the Worcester County Asian Longhorned Beetle Regulated Area.

Growing on Trees

New England Chapter International Society of Arboriculture

Single Rope Technique Workshop

Location: Blithewold Arboretum, Bristol, RI
Instructors: Donny Coffey, Dan Mello, Chris Girard, & Eric Whipple

Details: Option 1 covers both days: one day of introduction and overview to SRT, and one day of hands-on instruction, in which participants will be able to ascend and work a tree using SRT. Participants will receive TCIA's Best Practices for SRT manual. The cost for the two-day workshop is $275. Limited to 30 people. Two-Day - 12 ISA Credits, 12 CTSP Credits

Option 2 covers the first day only, which will be an introduction to SRT. The cost for this option is $125. One-Day - 6 ISA Credits, 6 CTSP Credits.

Workshop will commence at 9:00 a.m. and conclude at 4:00 p.m. Coffee and muffins will be provided both mornings. Participants must provide their own lunch. Registration is due by April 24. If there are not enough participants, the workshop will not be held. A cancellation notification will be issued ten days prior to the event.

Three ways to Register - Call 978-844-0441, Email: heather@newenglandisa.org, or Register online
More information at:
http://newenglandisa.org/workshops.html
Complete Agenda

New England Tree Climbing Championship

May 18, 2013, Goddard Memorial Park, 1095 Ives Road, Warwick, Rhode Island

What is a tree climbing competition?
Every year, Chapters of the ISA hold their own tree climbing championship (TCC.) Local TCC's are made up of safety-oriented tree care tasks and practices that allow arborists (tree care professionals) to win prizes for outstanding abilities and performance. Each regionally-based championship sends their Champions to the grand finale, known as the ITCC (International Tree Climbing Competition).

Additional Information on the NEC-ISA website:
http://www.newenglandisa.org/tree_climbing_championship.html

Mass Audubon

Foresters for the Birds in Massachusetts

Sponsored by Habitat Education Center and Wildlife Sanctuary and MA/VT Woodlands Partnership and Audubon Vermont

When: Friday, May 3, 2013, 8:00 a.m. - 4:00 p.m.
Location: Fellowship Hall, 17 Little Mohawk Rd, Shelburne, MA
Instructors: Pete Grima - MA DCR Forester; Scott Sylvester - Consulting Forester; Sam Schneski - VT County Forester; Alison Wright - MA DCR Forester; Matt Kamm - Mass Audubon; Steve Hagenbuch - Audubon Vermont; Stuart Watson - Mass Audubon; Kristen Sharpless - Audubon Vermont
Audience: Adult * Cost: Free
The MA/VT Woodlands Partnership presents this professional development opportunity for foresters, in conjunction with Mass Audubon, Audubon Vermont, MA DCR Foresters, and VT County Foresters.

At this workshop, we will discuss:
How to use the *Foresters for the Birds* toolkit to manage forests with birds in mind. Explore different forest stands managed with birds in mind. Manage oak and central hardwoods with birds in mind. Share knowledge and experiences to create new guidelines for future forest bird work. An optional bird banding session will take place at the end of the workshop.

6.5 CFE credits will be available for licensed foresters (plus 1 additional credit for those who attend the bird banding session).

This workshop is for consulting foresters working in Massachusetts. If you are a landowner interested in improving bird habitat on your property, please contact Matt Kamm mkamm@massaudubon.org or Stuart Watson swatson@massaudubon.org for more information.

Please bring your own lunch, and prepare to be outside for most of the day rain or shine!

Register online or call 617-489-5050 to register by phone.
Register by mail: program registration form (PDF 66K)

For more information, contact:
Habitat Education Center and Wildlife Sanctuary
habitat@massaudubon.org ;
http://www.massaudubon.org/catalog/listing.php?program_code=1521-HA13SP1

(Continued, bottom of next page)

News

Insect Pests More Plentiful in Hotter Parts of City than in Cooler Areas

Mar. 27, 2013 — Higher temperatures in cities can be a key driver of insect pest outbreaks on trees in urban areas, according to research published March 27 in the open access journal *PLOS ONE* by Emily Meineke from North Carolina State University and colleagues from other institutions. The researchers found that a scale insect that exclusively feeds on oak trees was 13 times more abundant on willow oaks in the hottest parts of the city of Raleigh, North Carolina, than in cooler areas of the same city, even when other factors, like natural enemies that would kill the insects, were similar in both areas. In a second experiment, they found scale insects collected from trees in hot areas had higher survival rates in hot greenhouses than in cool ones. Read the full story at ScienceDaily.

Urban Vegetation Deters Crime in Philadelphia

Mar. 25, 2013 — Contrary to convention, vegetation, when well-maintained, can lower the rates of certain types of crime, such as aggravated assault, robbery, and burglary, in cities, according to a Temple University study, "Does vegetation encourage or suppress urban crime? Evidence from Philadelphia, PA," has been published in the journal *Landscape and Urban Planning*. "There is a long-standing principle, particularly in urban planning, that you don't want a high level of vegetation, because it abets crime by either shielding the criminal activity or allowing the criminal to escape," said Jeremy Mennis, associate professor of geography and urban studies at Temple. "Well-maintained greenery, however, can have a suppressive effect on crime." Read the full story at ScienceDaily.

Transforming Urban Wasteland into Opportunity

by Jan Overney

March 13, 2013 –Almost every city has them - closed down factories and utilities, run down and abandoned commercial and residential plots. Today, derelict urban sites are increasingly being considered as a resource by urban planners and architects in cities strapped for space but seeking to grow. In Europe, their regeneration has become popular, often revitalizing city centers while increasing their density. In a book that was published recently, Emmanuel Rey puts forward a framework based both on research projects and concrete experience gained in the context of the rehabilitation of what is now the Ecoparc neighborhood in Neuchâtel to help integrate sustainability into the core of this regeneration process. Read the full story at Phys.org.

Vancouver Council Seeks 'Urban Forestry' Consultant to Advise on Planting 150,000 Trees

By Sam Cooper

March 19, 2013—As Vancouver moves forward with an ambitious plan to plant 150,000 new city trees by 2020, city hall is looking to spend $150,000 for an "urban forestry" consultant. A request for bids says the consultant will work about 300 hours and the city has a budget of up to $150,000. The consultant will understand both professional forestry and urban design, the proposal says, and devise a strategy helping city staff to plant and maintain suitable trees. The city's $1million "vibrant urban forest"

street-tree strategy was one of the major spending items approved in the Vancouver park board's 2013 capital budget. The strategy fits within Mayor Gregor Robertson's "greenest city" goals, and perceived benefits are cleaner air, a more beautiful city, and increased local fruit production. Robertson's council sees urban food production as a way to boost the city's "green economy," while reducing greenhouse gas emissions associated with sourcing food from afar. Read the complete story at The Province.

Mount Auburn Trees

Sponsored by Habitat Education Center and Wildlife Sanctuary

When: Saturday, May 4, 2013, 9:30 a.m. - 11:00 a.m.

Location: Habitat Education Center and Wildlife Sanctuary, Belmont

Instructors: Elizabeth Atkins - Teacher/Naturalist; Florence DiTirro - Teacher/Naturalist

Audience: Adult

Cost: Mass Audubon Members—Adult $12.00; Non-members: Adult $15.00

We'll examine their trunks and buds and discuss their role in history.

Instructions and Directions: Program meets at the main parking lot at Mt. Auburn Cemetery, Cambridge.

Register online or call 617-489-5050 to register by phone. Register by mail: program registration form (PDF 66K)

More information: https://www.massaudubon.org/catalog/listing.php?program_code=996-HA13SP1

On the Horizon

May 1	MA State Regulations Pertaining to Invasive Plant Management, Milford, MA http://extension.umass.edu/landscape/
May 8	Emerald Ash Borer Workshop, Shelburne Falls, MA http://www.mass.gov/dcr/stewardship/forestry/
May 18	New England Chapter – International Society of Arboriculture Tree Climbing Competition, Goddard Park, Warwick, RI, www.newenglandisa.org
May 23	Online Forum for Tree Professionals www.unri.org/uftoday [webcast]
June 4	Scouting for Insect & Weed Problems of Woody Ornamentals, Worcester, MA http://extension.umass.edu/landscape/
June 5	DCR Tree City USA Award Ceremony and Luncheon Brookline, MA
June 6	Scouting for Insect & Weed Problems of Woody Ornamentals, Amherst, MA, http://extension.umass.edu/landscape/
June 20	Online Forum for Tree Professionals, www.unri.org/uftoday [webcast]
Aug 3-7	ISA International Conference, Toronto, Canada www.isa-arbor.com
Sept 20-22	NEC-ISA - 5th Annual Women's Tree Climbing Workshop - Level 1 Beginners Alton Jones Educational Camp, New Greenwich, RI, www.newenglandisa.org
Oct 25-26	Massachusetts Tree Steward Training, Harvard Forest, Petersham, MA

Save the Dates!

Tree City USA Awards Ceremony and Luncheon

June 5, 2013, Brookline, MA

AND

MA-DCR Tree Steward Training, Harvard Forest, Petersham, MA October 25-26

Bureau of Forestry
Department of Conservation and Recreation
251 Causeway Street, Suite 900
Boston, MA 02114

Eric Seaborn, Program Coordinator
eric.seaborn@state.ma.us, (617) 626-1468

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If you have a topic you'd like to see covered or want to submit an item to *The Citizen Forester* (article, photo, event listing, etc.), please contact Mollie Freilicher or click here.

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